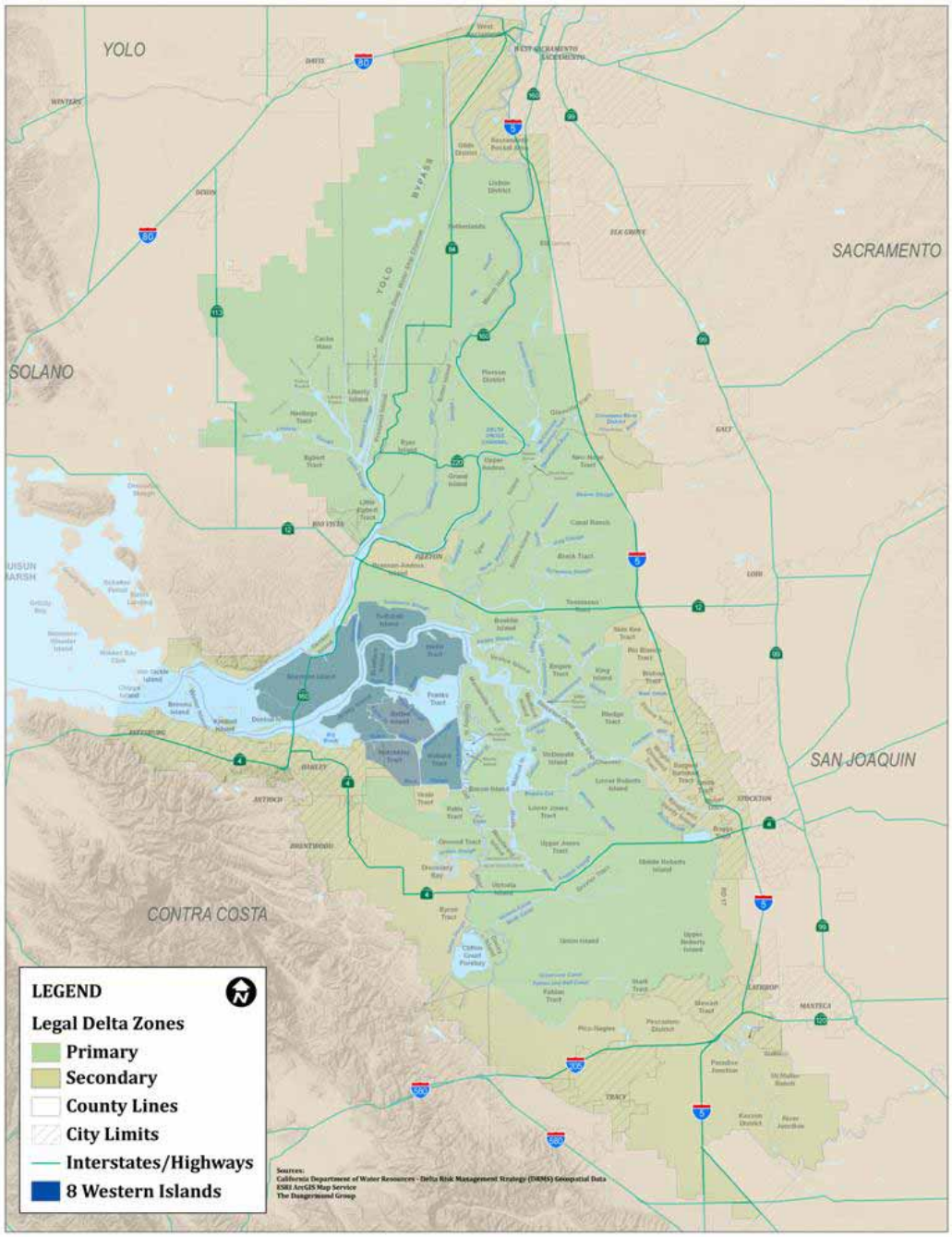
## Appendix D: Other Special Levees (Chapter 5)

## Appendix D List of Figures

## The Eight Western Islands

The eight western islands and tracts have been identified by the State as being critical to water quality in the Delta as they provide a buffer against saltwater intrusion. Their importance will increase if sea level rises at a faster rate. These islands are identified in Figure D1.

**Figure D1 The Eight Western Islands**[1]

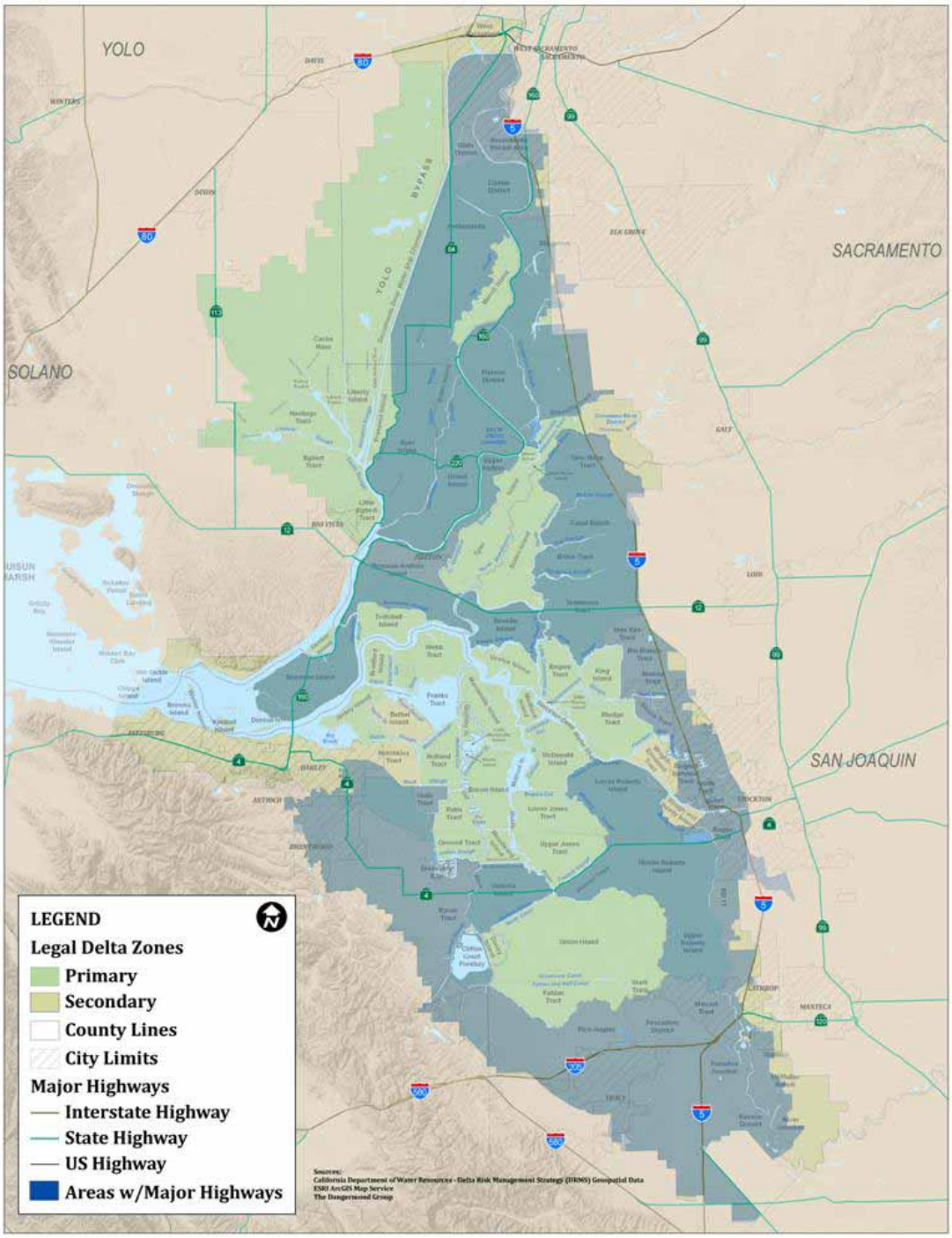



[1] Locations of infrastructure have been generally been obtained from the DRMS GIS data set developed by URS Corporation and provided by DWR. For high resolution image see http://forecast.pacific.edu/desp-figs.html

## Levees that Protect Major Highways

The islands that include major highways that are protected by levees are shown in Figure D2.

**Figure D2 Islands with Major Highways**[2]

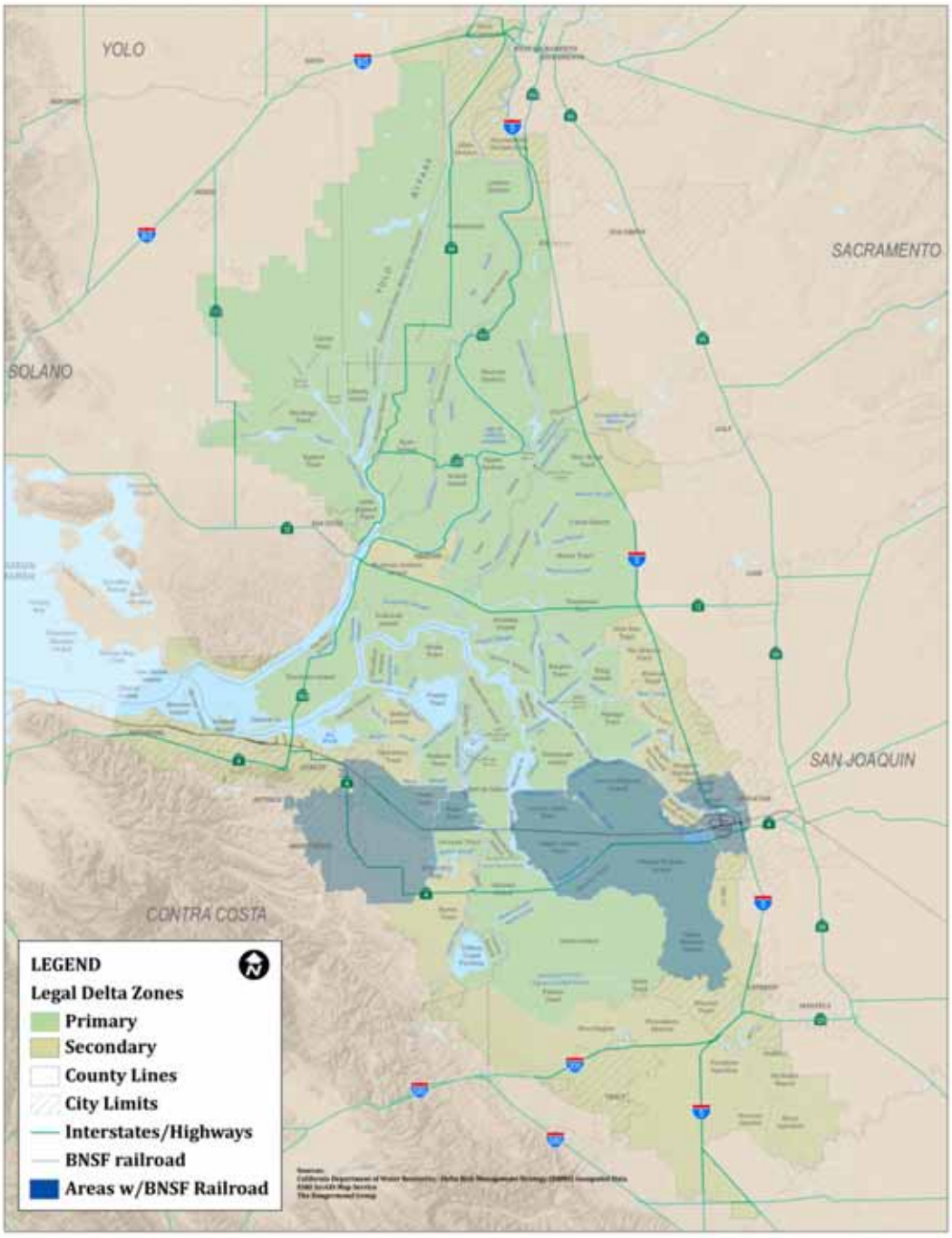



[2] Locations of infrastructure have been generally been obtained from the DRMS GIS data set developed by URS Corporation and provided by DWR. For high resolution image see: http://forecast.pacific.edu/desp-figs.html

## Levees that Protect the BNSF Railway

The islands crossed by the Burlington Northern Santa Fe railway are shown in Figure D3. Although BNSF does not contribute to the maintenance of the levees that protect the railroad, they are suing the State for losses sustained in the 2004 flooding of Upper Jones Tract.

**Figure D3 Islands that house the BNSF Railroad[3]**

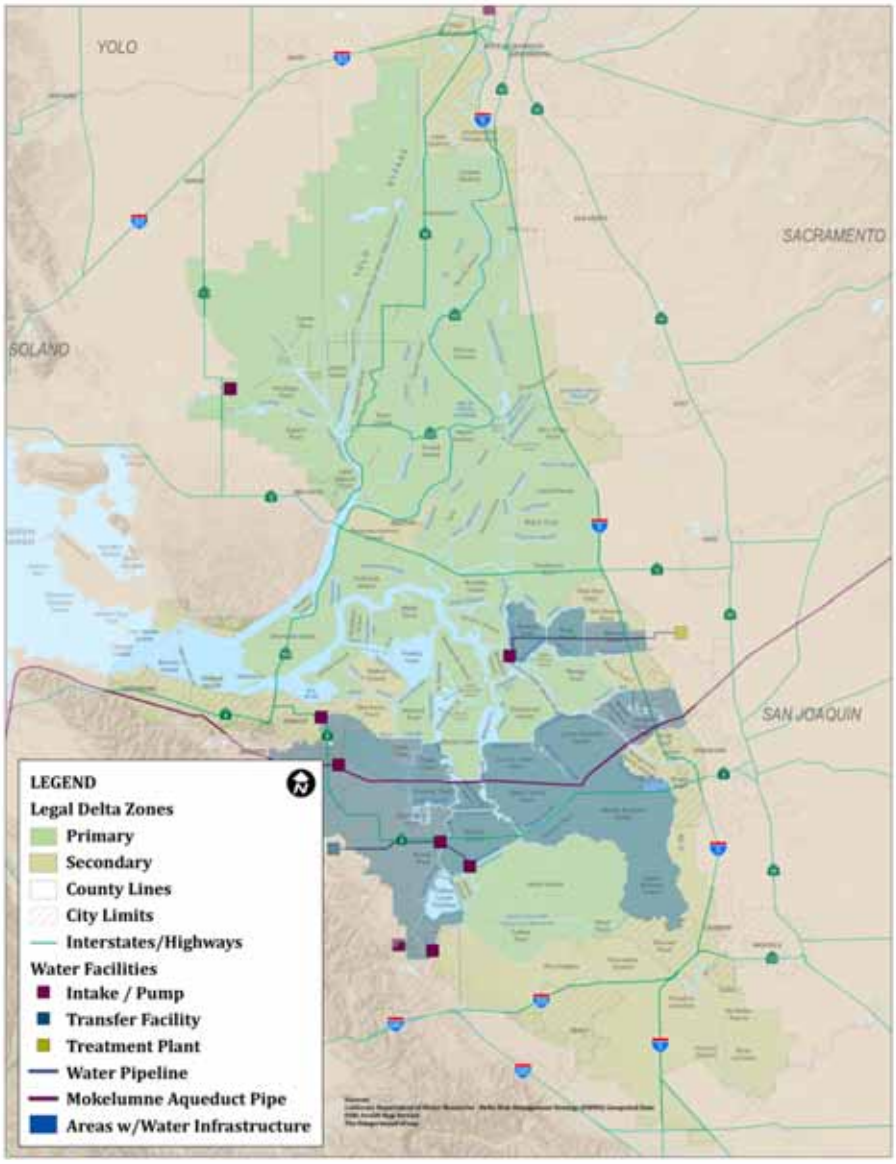



[3] Locations of infrastructure have been generally been obtained from the DRMS GIS data set developed by URS Corporation and provided by DWR. For high resolution image see: http://forecast.pacific.edu/desp-figs.html

## Levees that Protect Water Supply Pumping Plants and Pipelines

The islands that house water supply pumping plants and pipelines are shown in Figure D4. These include the Mokelumne Aqueduct of East Bay Municipal Utility District (EBMUD), the Contra Costa Water District pumping plants and pipelines, the Solano County Water Agency Barker Slough intake, the new City of Stockton intake and pipeline, and the Banks and Jones pumping plants of the State Water Project and the Central Valley Project. EBMUD makes annual contributions to the reclamation districts that protect the Mokelumne Aqueduct and was instrumental in securing $35 million of bond funding being earmarked for the improvement of levees that protect the aqueduct.

**Figure D4 Islands that House Water Supply Pumping Plants and Pipelines[4]**

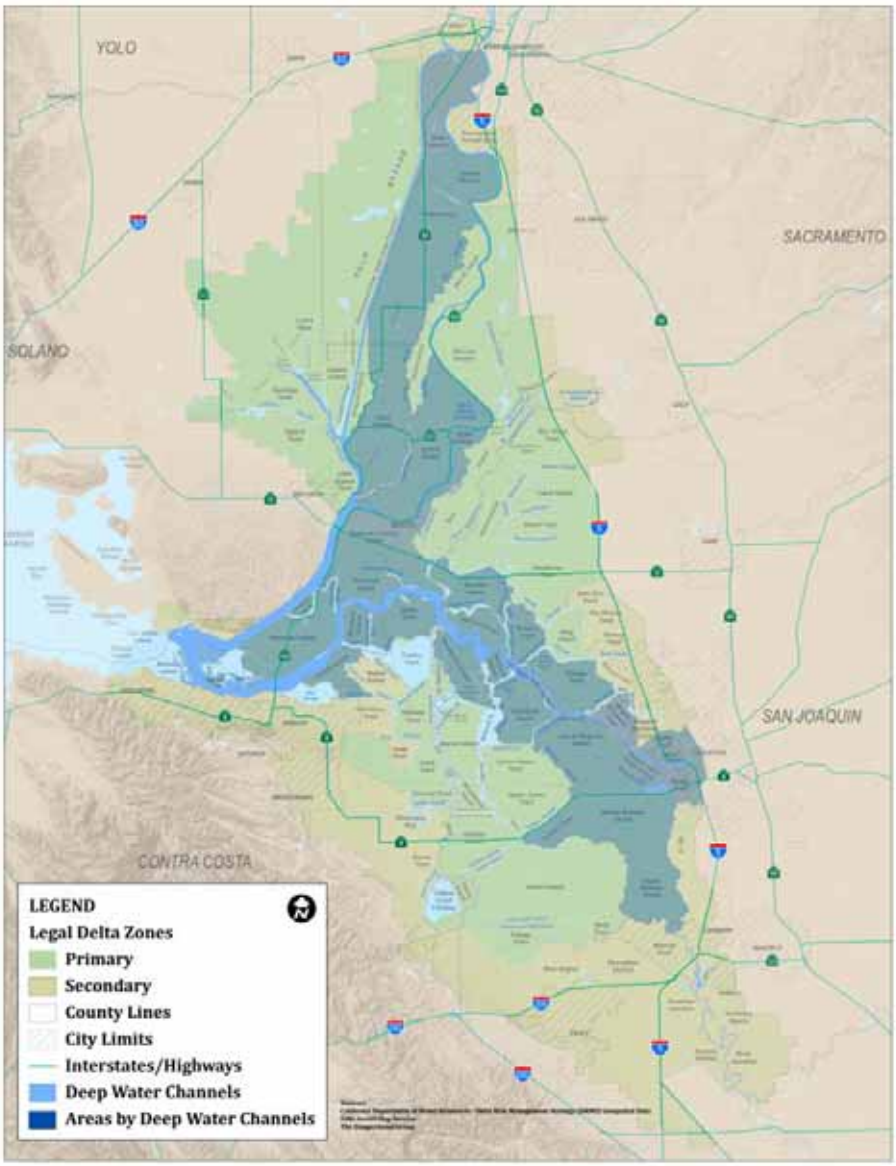



[4] Locations of infrastructure have been generally been obtained from the DRMS GIS data set developed by URS Corporation and provided by DWR. For high resolution image see: http://forecast.pacific.edu/desp-figs.html

## Levees Bordering the Deep-water Ship Channels

Although the deep-water ship channels to the Ports of Stockton and West Sacramento have some negative effects on the Delta ecosystem because they foster salinity intrusion and the introduction of non-native species, they also make important contributions to the environment and the economy. They help reduce truck traffic through and around the Delta and improve air quality, and are local economic drivers for West Sacramento and Stockton. The islands that form the borders of the deep-water ship channels are shown in Figure D5. Maintenance of the levees surrounding these islands is critical to maintaining the ship channels. Without these levees the ship channels would tend to silt up, and shipping would be exposed to rougher water.

**Figure D5 Islands Bordering the Deep-water Ships Canals[5]**

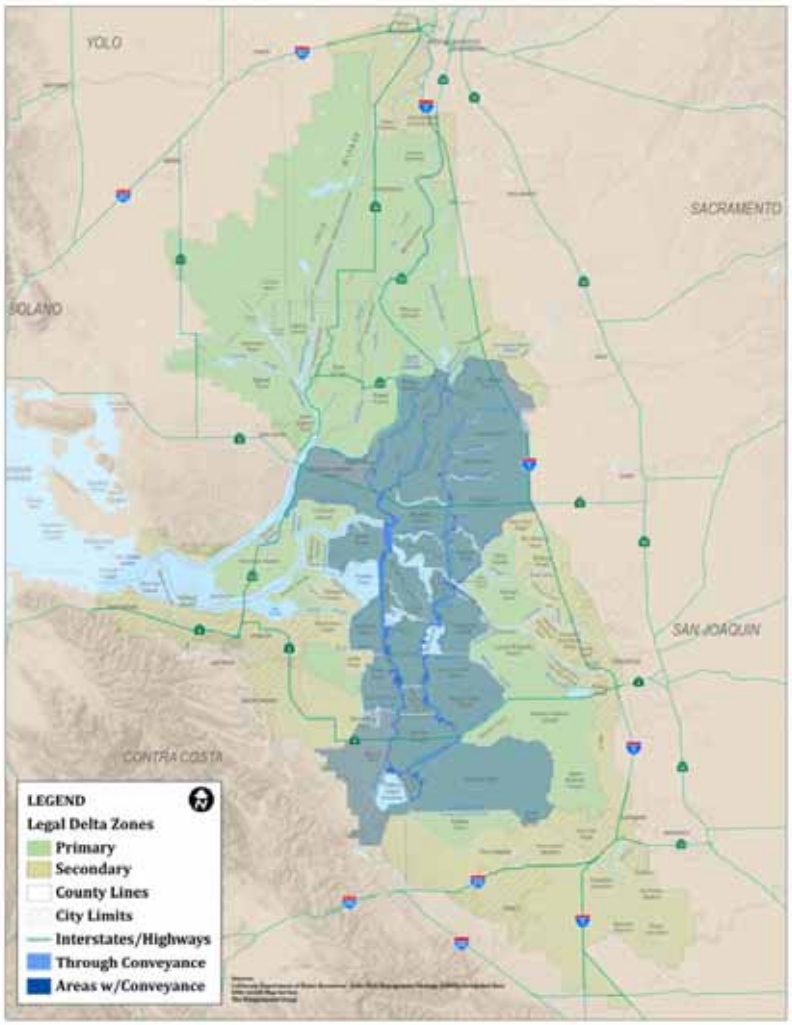



[5] Locations of infrastructure have been generally been obtained from the DRMS GIS data set developed by URS Corporation and provided by DWR. For high resolution image see: http://forecast.pacific.edu/desp-figs.html

## Levees Bordering the Principal Paths for Through-Delta Water Conveyance

Starting at the Delta Cross Canal, just north of Walnut Grove, there are two principal paths for the conveyance of water from the Sacramento River to the export pumps in the south Delta—one basically follows the North Fork Mokelumne River and then the Old River, and the other follows the South Fork Mokelumne and then Middle River. A third initial path is provided by Georgiana Slough which then joins up with the Old River path. As presently planned, there would continue to be some through-Delta conveyance even after the completion of the new north Delta intakes envisioned by the Bay Delta Conservation Plan (BDCP); if they are constructed, new conveyance facilities will not be completed for many years. Maintenance of the levees adjacent to these conveyance paths is therefore very important and the water exporters and DWR have undertaken various studies to improve them and/or restore them as quickly as possible following any disruption. The islands adjacent to these conveyance paths are shown in Figure D6.

**Figure D6 Islands Bordering the Principal Paths for Through-Delta Water Conveyance[6]**

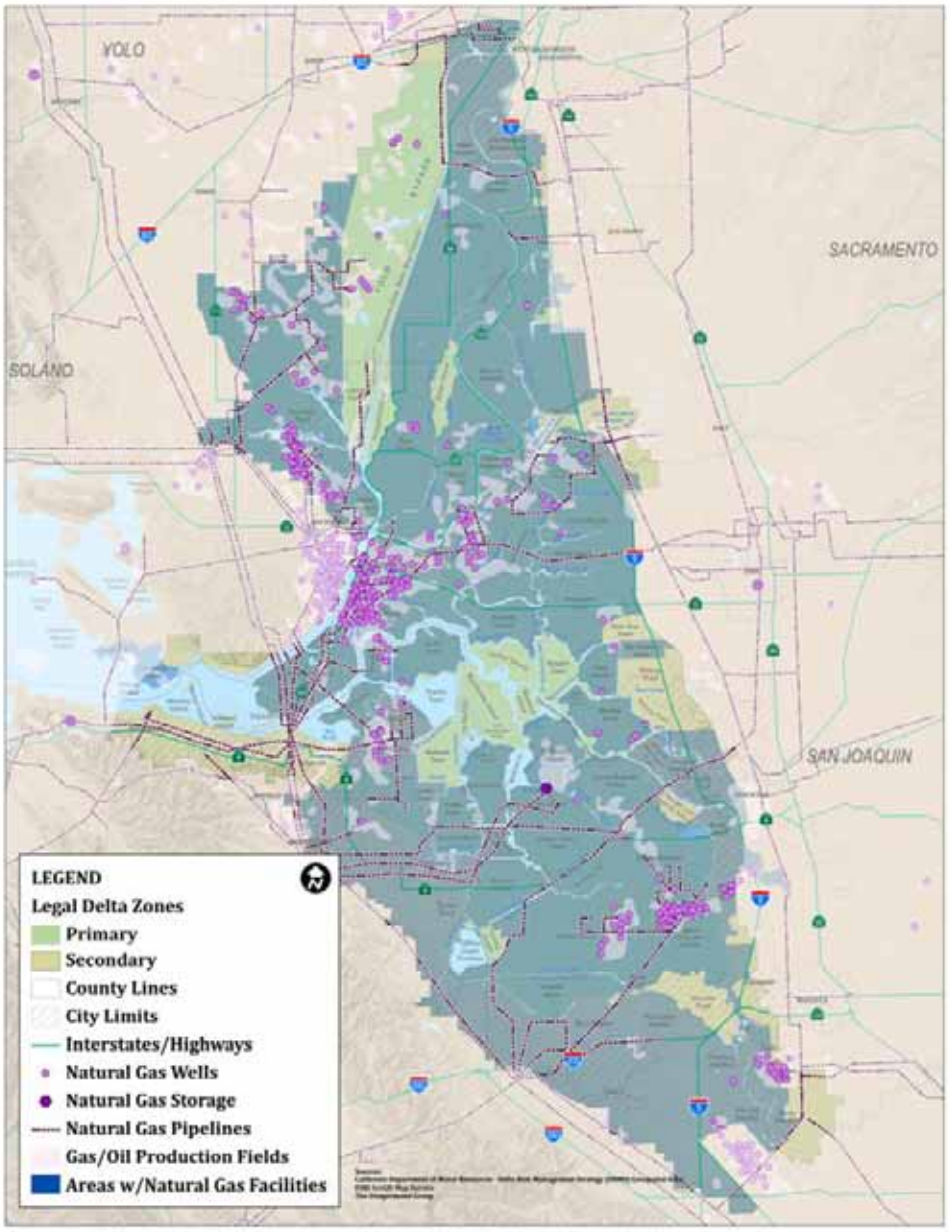



[6] Locations of infrastructure have been generally been obtained from the DRMS GIS data set developed by URS Corporation and provided by DWR. For high resolution image see: http://forecast.pacific.edu/desp-figs.html

## Levees Protecting Natural Gas Production and Storage Facilities and Pipelines

The islands housing natural gas production and storage facilities and pipelines are shown in Figure D7. The facility of most significance is the PG&E storage facility on McDonald Island. PG&E contributes 90 percent of the funds to the local reclamation district and has been committed to maintaining superior levees around the island since a failure occurred in 1982.

**Figure D7 Islands Housing Natural Gas Production and Storage Facilities and Pipelines**[7]

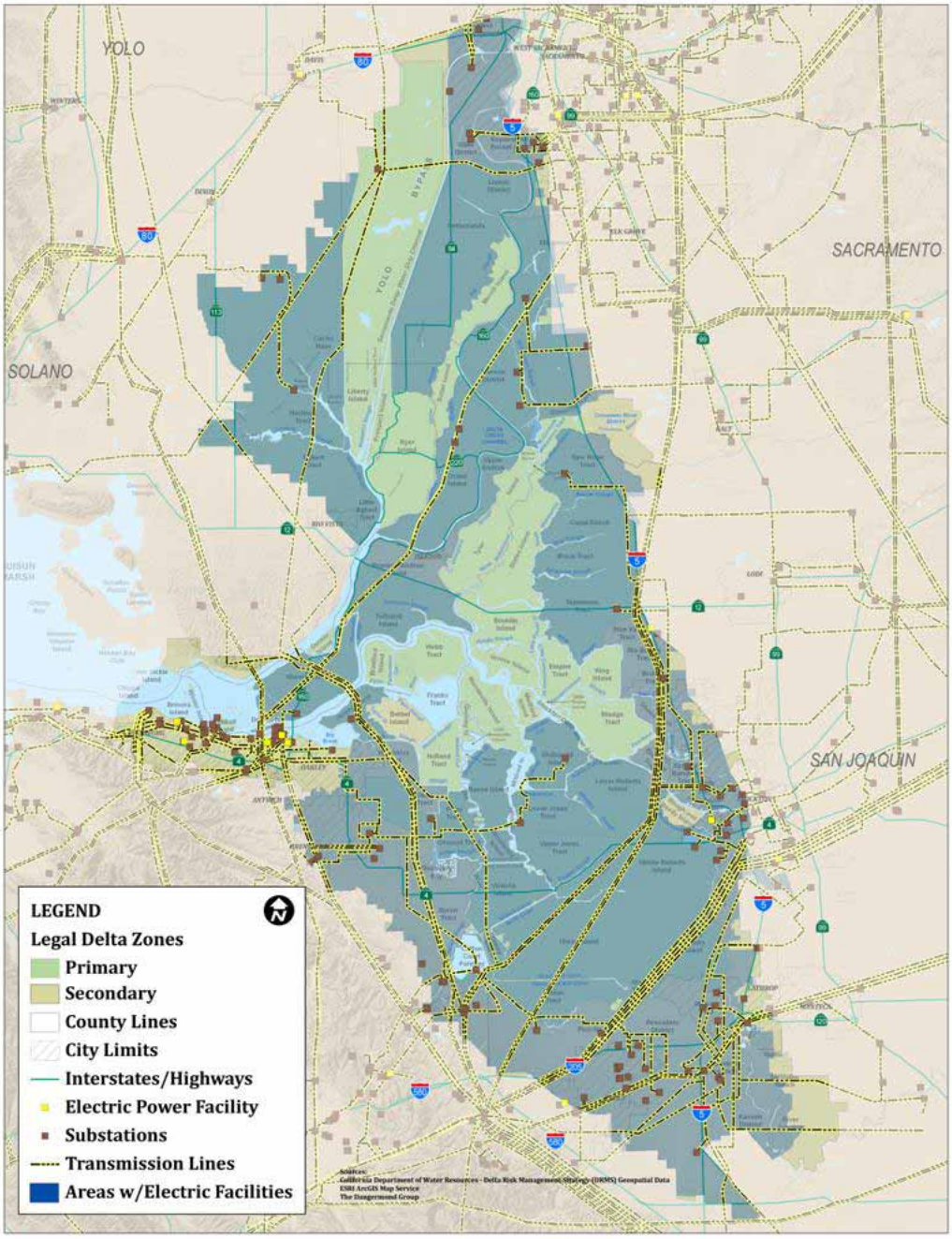



[7] Locations of infrastructure have been generally been obtained from the DRMS GIS data set developed by URS Corporation and provided by DWR. For high resolution image see: http://forecast.pacific.edu/desp-figs.html

## Levees Protecting Electric Power Transmission Lines and Substations

The islands that are crossed by electric power transmission lines or that house major substations are shown in Figure D8. Of perhaps equal importance are fiber-optic communication cables, but their locations are proprietary and they are not shown.

**Figure D8 Islands Housing Electric Power Transmission Lines and Substations**[8]

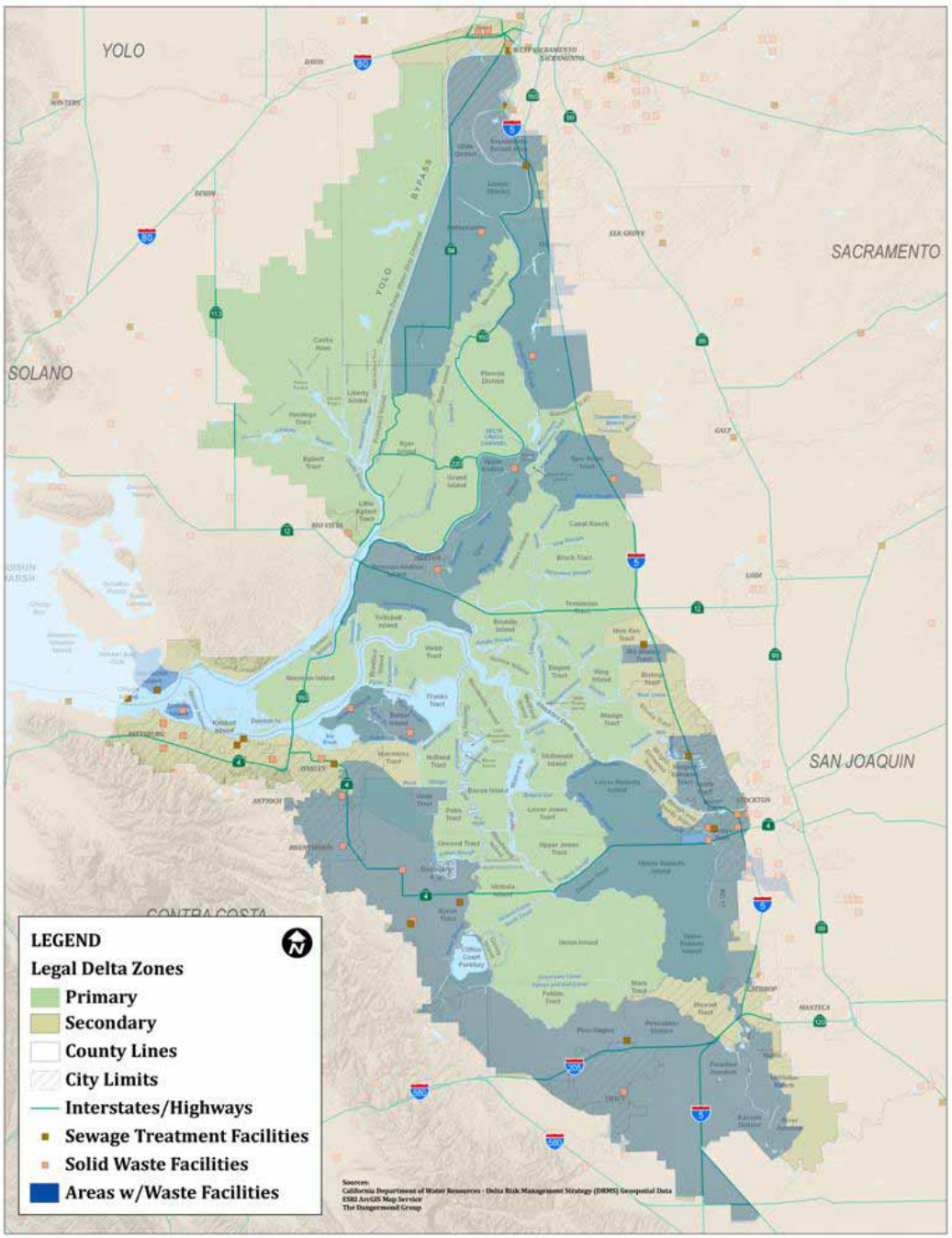



[8] Locations of infrastructure have been generally been obtained from the DRMS GIS data set developed by URS Corporation and provided by DWR. For high resolution image see: http://forecast.pacific.edu/desp-figs.html

## Levees that Protect Waste Disposal Facilities

The islands that contain sewage treatment plants and solid waste disposal facilities are shown in Figure D9.

**Figure D9 Islands Housing Sewage Treatment Plants**[9]

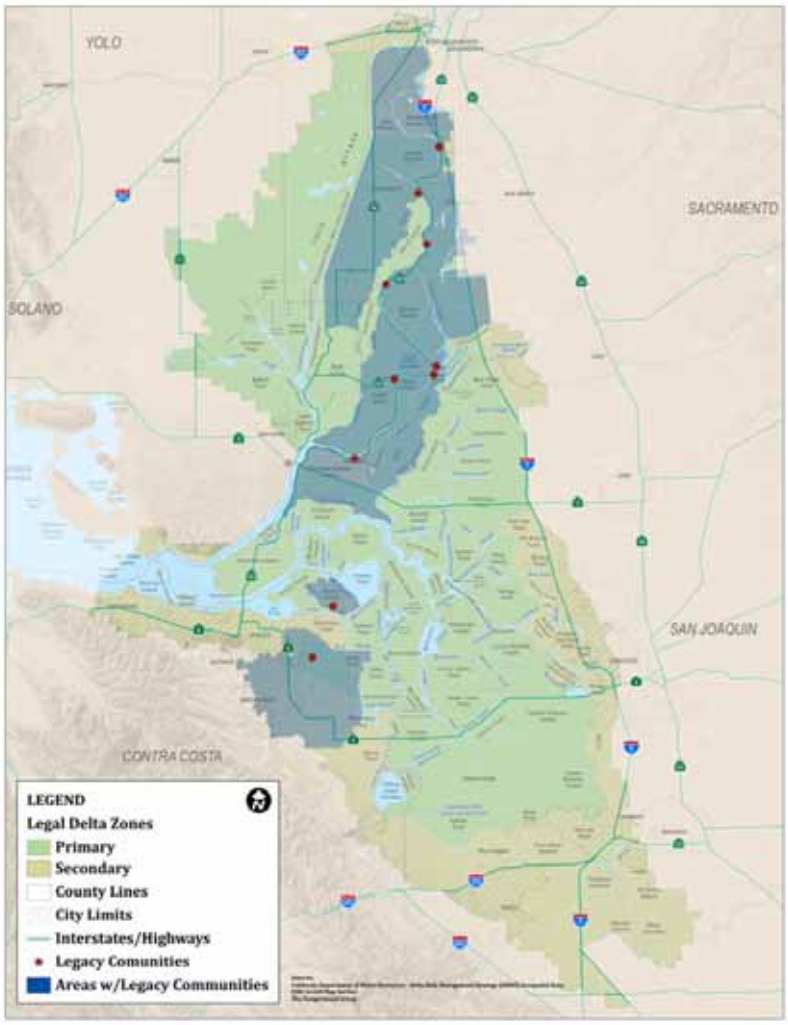



[9] Locations of infrastructure have been generally been obtained from the DRMS GIS data set developed by URS Corporation and provided by DWR. For high resolution image see: http://forecast.pacific.edu/desp-figs.html

## Levees that Protect Legacy Communities

The islands that contain Legacy Communities are shown in Figure D10. Flood protection for Legacy Communities in the Delta involves several special considerations. The Legacy Communities are primarily, but not exclusively, protected by project levees that exceed the PL 84-99 geometric standard. However, all these towns have either been or are in the process of being remapped into the 100-year floodplain by FEMA. Having a levee system certified is not based on meeting the PL 84-99 levee standard, but instead is based on meeting the requirements of Section 65.10 of the National Flood Insurance Program (NFIP). These regulations must be met in order to be mapped outside the floodplain and include a multiple criteria which require a level of engineering analysis that far exceeds typical reclamation district budgets. Thus it appears that flood insurance costs in the Legacy Communities will rise dramatically, and that this will discourage growth and investment in the Legacy Communities unless special measures are taken.

**Figure D10 Islands Containing Legacy Communities[10]**




[10] Locations of infrastructure have been generally been obtained from the DRMS GIS data set developed by URS Corporation and provided by DWR. For high resolution image see: http://forecast.pacific.edu/desp-figs.html